

## **AMENDMENTS TO THE SPECIFICATION**

**Page 1, immediately after the title, please insert:**

This application is a U.S. national stage of International Application No. PCT/JP2003/014134 filed November 6, 2003.

**Page 2, lines 19-26, please rewrite as follows:**

Moreover, as a  $\beta$ -ketoaldehyde derivative, which is one of the starting compounds in the production method of quinolinecarbaldehydes, which is the new invention described in the present specification, for example, 3-cyclopropyl-1,1-diethoxy-3-oxopropane is known, and this compound is produced by reacting sodium formyl cyclopropyl formylmethyl ketone enolate with ethanol in the presence of sulfuric acid (Ukr. Khim. Zh., page Vol. 42, No. 4, p. 407 (1976)).

**Page 15, lines 12-19, please rewrite as follows:**

As the metal alkoxide compound (V), which is a starting material of this reaction, for example, sodium formyl cyclopropyl formylmethyl ketone enolate and the like can be mentioned, and as compound (VI), which is the other starting material, for example, ethylene glycol, propylene glycol, trimethylene glycol, 2-methyl-1,3-propanediol, 2,2-dimethyl-1,3-propanediol, (1,2-, 1,3- or 2,3-)butanediol, 2-mercaptopropanoic acid and the like can be mentioned.

**Page 18, lines 29-32, please rewrite as follows:**

The metal alkoxide compound (V) such as sodium formyl cyclopropyl formylmethyl ketone enolate used as a starting material in the present invention can be synthesized by a method described in, for example, JP-A-49-124073.

**Page 19, lines 5-22, please rewrite as follows:**

Under a nitrogen atmosphere, 1,3-propanediol (31.8 g, 417 mmol) and sulfuric acid (31.28 g, 312 mmol) were added to a four-neck flask (interior content 200 ml) equipped with a stirrer, a thermometer and a funnel for dropwise addition, then a solution

of sodium formyl cyclopropyl formylmethyl ketone enolate (27.96 g, 208.5 mmol) in methanol (20 g) was added dropwise with stirring at an internal temperature of 25°C over 1 hr. After the completion of the dropwise addition, the internal temperature was raised to 60°C and the mixture was further stirred for 1 hr. The obtained reaction mixture was added to a saturated aqueous sodium hydrogen carbonate solution (40 g) and the mixture was partitioned between the organic layer and the aqueous layer. The obtained organic layer was analyzed by gas chromatography. As a result, 2-(2-cyclopropyl-2-oxo-ethyl)-1,3-dioxane (27.0 g) was contained (yield 76%). This organic layer was concentrated and the residue was distilled at 50 Pa to give 2-(2-cyclopropyl-2-oxo-ethyl)-1,3-dioxane (26.22 g) from a fraction at 82-83°C.

**Page 19, line 29 to page 20, line 13, please rewrite as follows:**

Under a nitrogen atmosphere, 2-methyl-1,3-propanediol (26.86 g, 298 mmol) and sulfuric acid (8.2 g, 82 mmol) were added to a four-neck flask (interior content 100 ml) equipped with a stirrer, a thermometer and a funnel for dropwise addition, then a solution of sodium formyl cyclopropyl formylmethyl ketone enolate (10 g, 74.6 mmol) in methanol (20 g) was added dropwise with stirring at an internal temperature of 25°C over 1 hr. After the completion of the dropwise addition, the internal temperature was raised to 60°C and the mixture was further stirred for 1 hr. The obtained reaction mixture was added to a saturated aqueous sodium hydrogen carbonate solution (40 g) and the mixture was partitioned between the organic layer and the aqueous layer. The obtained organic layer was analyzed by gas chromatography. As a result, 2-(2-cyclopropyl-2-oxo-ethyl)-5-methyl-1,3-dioxane (9.92 g) was contained (yield 72%). This organic layer was concentrated and the residue was distilled at 50 Pa to give 2-(2-cyclopropyl-2-oxo-ethyl)-5-methyl-1,3-dioxane (9.11 g) from a fraction at 91-92°C.

**Page 20, line 25 to page 21, line 9, please rewrite as follows:**

Under a nitrogen atmosphere, ethylene glycol (17.88 g, 298 mmol) and sulfuric acid (8.2 g, 82 mmol, 1.1 mol-fold) were added to a four-neck flask (interior content 100 ml) equipped with a stirrer, a thermometer and a funnel for dropwise addition, then a solution of sodium formyl cyclopropyl formylmethyl ketone enolate (10 g, 74.6 mmol) in

methanol (20 g) was added dropwise with stirring at an internal temperature of 25°C over 1 hr. After the completion of the dropwise addition, the internal temperature was raised to 60°C and the mixture was further stirred for 1 hr. The obtained reaction mixture was added to a saturated aqueous sodium hydrogen carbonate solution (40 g) and the mixture was partitioned between the organic layer and the aqueous layer. The obtained organic layer was analyzed by gas chromatography. As a result, 2-(2-cyclopropyl-2-oxo-ethyl)-1,3-dioxolane (8.77 g) was contained (yield 75%). This organic layer was concentrated and the residue was distilled at 50 Pa to give 2-(2-cyclopropyl-2-oxo-ethyl)-1,3-dioxolane (8.24 g) from a fraction at 93-96°C.

**Page 21, lines 15-33, please rewrite as follows:**

Under a nitrogen atmosphere, propylene glycol (31.8 g, 417 mmol, 2 mol-fold) and sulfuric acid (31.28 g, 312 mmol, 1.5 mol-fold) were added to a four-neck flask (interior content 200 ml) equipped with a stirrer, a thermometer and a funnel for dropwise addition, then a solution of sodium formyl cyclopropyl formylmethyl ketone enolate (27.96 g, 208.5 mmol) in methanol (20 g) was added dropwise with stirring at an internal temperature of 25°C over 1 hr. After the completion of the dropwise addition, the internal temperature was raised to 60°C and the mixture was further stirred for 1 hr. The obtained reaction mixture was added to a saturated aqueous sodium hydrogen carbonate solution (40 g) and the mixture was partitioned between the organic layer and the aqueous layer. The obtained organic layer was analyzed by gas chromatography. As a result, 2-(2-cyclopropyl-2-oxo-ethyl)-1,3-dioxane (27.0 g) was contained (yield 76%). This organic layer was concentrated and the residue was distilled at 50 Pa to give 2-(2-cyclopropyl-2-oxo-ethyl)-1,3-dioxane (26.22 g) from a fraction at 82-83°C.

**Page 22, lines 7-25, please rewrite as follows:**

Under a nitrogen atmosphere, mercapto ethanol (46.8 g, 400 mmol, 2 mol-fold) and sulfuric acid (30.0 g, 300 mmol, 1.5 mol-fold) were added to a four-neck flask (interior content 300 ml) equipped with a stirrer, a thermometer and a funnel for dropwise addition, then a solution of sodium formyl cyclopropyl formylmethyl ketone enolate

(26.8 g, 200 mmol) in methanol (60 g) was added dropwise with stirring at an internal temperature of 25°C over 1 hr. After the completion of the dropwise addition, the internal temperature was raised to 60°C and the mixture was further stirred for 1 hr. The obtained reaction mixture was added to a saturated aqueous sodium hydrogen carbonate solution (40 g) and methyl methylene chloride was added to partition the obtained mixture between the organic layer and the aqueous layer. The obtained organic layer was further extracted 3 times with methylene chloride, combined with the organic layer obtained earlier. The mixture was concentrated and the residue was distilled at 50 Pa to give 2-(2-cyclopropyl-2-oxo-ethyl)-1-oxa-3-thiolane from a fraction at 99°C (8.96 g, yield 28%).